

WHAT IS CLAIMED IS:

1. For use with a communications device having a physical  
2 layer system and a data link layer system with a media access  
3 control layer subsystem and coupleable to a communications network,  
4 a translation system, comprising:

5 a generator configured to construct a piggyback packet  
6 containing characteristics associated with said physical layer  
7 system; and

8 a correlator, associated with said generator, configured to  
9 receive said piggyback packet and extract information about said  
10 physical layer system.

11 2. The translation system as recited in Claim 1 wherein said  
12 correlator further receives said piggyback packet and extracts said  
13 information without substantially modifying said media access  
14 control layer subsystem.

15 3. The translation system as recited in Claim 1 wherein said  
16 generator further constructs and transmits said piggyback packet  
17 without substantially modifying said media access control layer  
18 subsystem.

4. The translation system as recited in Claim 1 wherein said  
2 piggyback packet is associated with a data packet received by said  
3 physical layer system.

5. The translation system as recited in Claim 1 wherein said  
2 communications network is a wireless communications network.

6. The translation system as recited in Claim 1 wherein said  
2 characteristics associated with said physical layer system are  
3 interface characteristics of said physical layer system.

7. The translation system as recited in Claim 1 wherein said  
characteristics associated with said physical layer system are  
transmission line characteristics of said communications network.

8. The translation system as recited in Claim 1 wherein said  
generator further determines said characteristics associated with  
said physical layer system, stores said characteristics in said  
piggyback packet, sets a flag in said piggyback packet and passes  
said piggyback packet to said data link layer system.

9. The translation system as recited in Claim 1 wherein said  
2 generator is embodied in said physical layer system.

10. The translation system as recited in Claim 1 wherein said  
2 correlator further passes said information about said physical  
3 layer system to a receiving subsystem embodied within said  
4 communications device.

11. The translation system as recited in Claim 1 wherein said  
2 correlator is embodied in said data link layer system.

12. The translation system as recited in Claim 1 wherein at  
2 least a portion of said generator and said correlator are embodied  
3 in a sequence of operating instructions operable on a processor of  
4 said communications device.

13. A method for use with a communications device having a  
2 physical layer system and a data link layer system with a media  
3 access control layer subsystem and coupleable to a communications  
4 network, comprising:

5 constructing a piggyback packet containing characteristics  
6 associated with said physical layer system; and

7 receiving said piggyback packet and extracting information  
8 about said physical layer system.

14. The method as recited in Claim 13 wherein said receiving  
and said extracting are performed without substantially modifying  
said media access control layer subsystem.

15. The method as recited in Claim 13 wherein said  
constructing is performed without substantially modifying said  
media access control layer subsystem.

16. The method as recited in Claim 13 wherein said piggyback  
2 packet is associated with a data packet received by said physical  
3 layer system.

17. The method as recited in Claim 13 wherein said  
2 communications network is a wireless communications network.

18. The method as recited in Claim 13 wherein said  
2 characteristics associated with said physical layer system are  
3 interface characteristics of said physical layer system.

19. The method as recited in Claim 13 wherein said  
2 characteristics associated with said physical layer system are  
3 transmission line characteristics of said communications network.

20. The method as recited in Claim 13 wherein said  
constructing further comprises determining said characteristics  
associated with said physical layer system, storing said  
characteristics in said piggyback packet, setting a flag in said  
piggyback packet and passing said piggyback packet to said data  
link layer system.

21. The method as recited in Claim 13 wherein said  
constructing is performed by said physical layer system.

22. The method as recited in Claim 13 wherein said receiving  
and said extracting information further comprises passing said  
information about said physical layer system to a receiving  
4 subsystem embodied within said communications device.

23. The method as recited in Claim 13 wherein said receiving  
2 is performed by said data link layer system.

24. The method as recited in Claim 13 wherein said method is  
2 at least partially embodied in a sequence of operating instructions  
3 operable on a processor of said communications device.

~~25.~~ A communications device coupleable to a communications

2 network, comprising:

3       a physical layer system coupled to said communications  
4 network;

5       a data link layer system coupled to said physical layer system  
6 and having a media access control layer subsystem; and

7       a translator, including:

8            a generator that constructs a piggyback packet containing  
9 characteristics associated with said physical layer system,  
10 and

11            a correlator, associated with said generator, that  
12 receives said piggyback packet and extracts information about  
13 said physical layer system for use by said data link layer  
14 system.

26. The communications device as recited in Claim 25 wherein

2 said correlator further receives said piggyback packet and extracts  
3 said information without substantially modifying said media access  
4 control layer subsystem.

27. The communications device as recited in Claim 25 wherein  
2 said generator further constructs and transmits said piggyback  
3 packet without substantially modifying said media access control  
4 layer subsystem.

28. The communications device as recited in Claim 25 wherein  
2 said piggyback packet is associated with a data packet received by  
3 said physical layer system.

29. The communications device as recited in Claim 25 wherein  
said communications network is a wireless communications network.

30. The communications device as recited in Claim 25 wherein  
said characteristics associated with said physical layer system are  
interface characteristics of said physical layer system.

31 The communications device as recited in Claim 25 wherein  
2 said characteristics associated with said physical layer system are  
3 transmission line characteristics of said communications network.

32. The communications device as recited in Claim 25 wherein  
2 said generator further determines said characteristics associated  
3 with said physical layer system, stores said characteristics in  
4 said piggyback packet, sets a flag in said piggyback packet and  
5 passes said piggyback packet to said data link layer system.

33. The communications device as recited in Claim 25 wherein  
2 said generator is embodied in said physical layer system.

34. The translation system as recited in Claim 25 wherein  
said correlator further passes said information about said physical  
layer system to a receiving subsystem embodied within said  
communications device.

35. The communications device as recited in Claim 25 wherein  
said correlator is embodied in said data link layer system.

36. The communications device as recited in Claim 25 wherein  
2 at least a portion of said generator and said correlator are  
3 embodied in a sequence of operating instructions operable on a  
4 processor of said communications device.

31. A piggyback packet for use with a communication network

2 having a physical layer system and a data link layer system

3 associated with a protocol stack, comprising:

4 a packet type that indicates the type of said piggyback

5 packet; and

6 a modulation type that indicates a type of modulation signal

7 used in said physical layer system.

38. The piggyback packet as recited in Claim 37 wherein said

packet type is selected from the group consisting of:

a receive packet information type, and

a receive asynchronous information type.

39. The piggyback packet as recited in Claim 38 wherein said

piggyback packet further comprises a priority type and a mean

squared error value when said packet type is said receive packet

information type, said priority type indicates a priority of said

piggyback packet and said mean squared error value indicates a mean

6 squared error of a signal or group of signals.

40. The piggyback packet as recited in Claim 39 wherein said

2 priority flag further indicates that said piggyback packet is to be

3 passed up said protocol stack.

41. The piggyback packet as recited in Claim 39 wherein said  
2 modulation type is selected from the group consisting of:  
3       a pulse code modulation,  
4       a pulse amplitude modulation,  
5       a delta modulation, and  
6       a differential pulse code modulation.